WHAT IS CLAIMED IS:

1. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, which is charged or discharged by repeating a reaction of intercalating and deintercalating ions at said positive electrode and said negative electrode, respectively, wherein

said negative electrode comprises graphite powder which has a particle size equal to or smaller than 100 μm and which has an intensity ratio (P_2/P_1) equal to or less than 0.92, wherein P_1 is a diffraction peak of hexagonal crystal structure which appears in a range of the diffraction angle from 41.7 degrees to less than 42.7 degrees and P_2 is a diffraction peak of rhombohedral crystal structure which appears in a range of the diffraction angle from 42.7 degrees to 43.7 degrees in a X-ray diffraction pattern with the CuKα line.

2. A non-aqueous secondary battery as claimed in claim 1, wherein

said graphite has an intensity ratio (P_2/P_1) equal to or less than 0.92, wherein P_1 is a diffraction peak which appears in a range of the diffraction angle from 41.7 degrees to 42.7 degrees and P_2 is a diffraction peak which appears in a

range of the diffraction angle from 42.7 degrees to 43.7 degrees in a X-ray diffraction pattern with the CuKα line.

3. A non-aqueous secondary battery as claimed in claim 1, wherein

said graphite has an intensity ratio (P_3/P_1) equal to or less than 0.75, wherein P_1 is a diffraction peak which appears in a range of the diffraction angle from 41.7 degrees to 42.7 degrees and P_3 is a diffraction peak which appears in a range of the diffraction angle from 45.3 degrees to 46.6 degrees in a X-ray diffraction pattern with the CuKα line.

4. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, which is charged or discharged by repeating a reaction of intercalating and deintercalating ions at said positive electrode and said negative electrode, respectively, wherein

said negative electrode comprises graphite powder which has a particle size equal to or smaller than 100 μm and which has an intensity ratio (P_3/P_1) equal to or less than 0.75, wherein P_1 is a diffraction peak of hexagonal crystal structure which appears in a range of the diffraction angle from 41.7 degrees to less than 42.7 degrees and P_3 is a diffraction peak of rhombohedral crystal structure which appears in a range of the diffraction angle from 45.3 degrees

to 46.6 degrees in a X-ray diffraction pattern with the CuKα line.

5. A non-aqueous secondary battery as claimed in claim 4, wherein

said graphite has an intensity ratio (P_2/P_1) equal to or less than 0.92, wherein P_1 is a diffraction peak which appears in a range of the diffraction angle from 41.7 degrees to 42.7 degrees and P_2 is a diffraction peak which appears in a range of the diffraction angle from 42.7 degrees to 43.7 degrees in a X-ray diffraction pattern with the CuKα line.

6. A non-aqueous secondary battery as claimed in claim 4, wherein

said graphite has an intensity ratio (P_3/P_1) equal to or less than 0.75, wherein P_1 is a diffraction peak which appears in a range of the diffraction angle from 41.7 degrees to 42.7 degrees and P_3 is a diffraction peak which appears in a range of the diffraction angle from 45.3 degrees to 46.6 degrees in a X-ray diffraction pattern with the CuKα line.

7. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode, wherein

said negative electrode comprises graphite powder which has a particle size equal to or smaller than 100 μm and which has an intensity ratio (P_2/P_1) equal to or less than

0.92, wherein P_1 is a diffraction peak of hexagonal crystal structure which appears in a range of the diffraction angle from 41.7 degrees to less than 42.7 degrees and P_2 is a diffraction peak of rhombohedral crystal structure which appears in a range of the diffraction angle from 42.7 degrees to 43.7 degrees in a X-ray diffraction pattern with the CuKα line.

8. Electrodes for a non-aqueous secondary battery as claimed in claim 7, wherein

said graphite has an intensity ratio (P_2/P_1) equal to or less than 0.92, wherein P_1 is a diffraction peak which appears in a range of the diffraction angle from 41.7 degrees to 42.7 degrees and P_2 is a diffraction peak which appears in a range of the diffraction angle from 42.7 degrees to 43.7 degrees in a X-ray diffraction pattern with the CuKα line.

9. Electrodes for a non-aqueous secondary battery as claimed in claim 7, wherein

said graphite has an intensity ratio (P_3/P_1) equal to or less than 0.75, wherein P_1 is a diffraction peak which appears in a range of the diffraction angle from 41.7 degrees to 42.7 degrees and P_3 is a diffraction peak which appears in a range of the diffraction angle from 45.3 degrees to 46.6 degrees in a X-ray diffraction pattern with the CuKα line.

10. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode, wherein

said negative electrode comprises graphite powder which has a particle size equal to or smaller than 100 μm and which has an intensity ratio (P_3/P_1) equal to or less than 0.75, wherein P_1 is a diffraction peak of hexagonal crystal structure which appears in a range of the diffraction angle from 41.7 degrees to less than 42.7 degrees and P_3 is a diffraction peak of rhombohedral crystal structure which appears in a range of the diffraction angle from 45.3 degrees to 46.6 degrees in a X-ray diffraction pattern with the CuKα line.

11. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode, wherein

said negative electrode comprises graphite powder which has an intensity ratio (P_2/P_1) equal to or less than 0.92, wherein P_1 is a diffraction peak of hexagonal crystal structure which appears in a range of the diffraction angle from 41.7 degrees to less than 42.7 degrees and P_2 is a diffraction peak of rhombohedral crystal structure which appears in a range of the diffraction angle from 42.7 degrees to 43.7 degrees in a X-ray diffraction pattern with the CuKα line.

12. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode, wherein

said negative electrode comprises graphite powder which has an intensity ratio (P_3/P_1) equal to or less than 0.75, wherein P_1 is a diffraction peak of hexagonal crystal structure which appears in a range of the diffraction angle from 41.7 degrees to less than 42.7 degrees and P_3 is a diffraction peak of rhombohedral crystal structure which appears in a range of the diffraction angle from 45.3 degrees to 46.6 degrees in a X-ray diffraction pattern with the CuKα line.

13. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, wherein

said negative electrode comprises graphite powder having a rhombohedral crystal structure in a range of 0-20 % by weight.

14. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, wherein

said negative electrode comprises graphite powder having a hexagonal crystal structure in a range of at least 80% by weight.

15. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode,

said positive electrode or said negative electrode intercalating and deintercalating ions, wherein

graphite which is an active material of said negative electrode comprises a hexagonal crystal structure and a rhombohedral crystal structure, and

an existing ratio of the hexagonal crystal structure in said graphite is at least 80% by weight.

16. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode,

said positive electrode or said negative electrode intercalating and deintercalating ions, wherein

graphite which is an active material of said negative electrode is substantially composed of a hexagonal crystal structure and a rhombohedral crystal structure.

17. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode,

said positive electrode or said negative electrode intercalating and deintercalating ions, wherein

an active material of said negative electrode is carbon material,

said carbon material is composed of graphite crystal powder,

said graphite crystal powder has a particle size equal to or smaller than 100 μm, and

an existing ratio of a hexagonal crystal structure in said graphite crystal powder is at least 80% by weight.

18. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode,

said positive electrode or said negative electrode intercalating and deintercalating ions, wherein

an active material of said negative electrode is carbon material,

said carbon material is composed of natural graphite crystal powder, and

an existing ratio of a hexagonal crystal structure in said natural graphite crystal powder is at least 80% by weight.

19. Electrodes for a non-aqueous secondary battery, comprising:

a positive electrode, and

a negative electrode,

said positive electrode or said negative electrode intercalating and deintercalating ions, wherein

an active material of said negative electrode is carbon material,

said carbon material is composed of graphite crystal powder,

said graphite crystal powder has a particle size equal to or smaller than 100 μm,

an existing ratio of hexagonal crystal structure in said graphite crystal powder is at least 80% by weight, and

said graphite crystal powder has a deintercalating capacity for lithium of at least 320 gAh/g.

20. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, which is charged or discharged by repeating a reaction of intercalating and deintercalating ions at said positive electrode and said negative electrode, respectively, wherein

said graphite powder composing said negative electrode has a particle size equal to or smaller than 100 μm, and

said negative electrode comprises graphite powder having a fraction of a rhombohedral structure equal to or less than 20% by weight.

21. A non-aqueous secondary battery as claimed in claim 20, wherein

said graphite powder has a fraction of a hexagonal structure equal to or more than 80% by weight.

22. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, which is charged or discharged by repeating a reaction of intercalating and deintercalating ions at said positive electrode and said negative electrode, respectively, wherein

said graphite powder composing said negative electrode has a particle size equal to or smaller than 100 μm, and

said negative electrode comprises graphite powder having a fraction of a rhombohedral structure equal to or less than 10% by weight.

23. A non-aqueous secondary battery as claimed in claim 22, wherein said graphite powder has a fraction of a hexagonal structure equal to or more than 90% by weight.

24. A non-aqueous secondary battery comprising:

a positive electrode,

a negative electrode, and

electrolytic solution, which is charged or discharged by repeating a reaction of intercalating and deintercalating ions at said positive electrode and said negative electrode, respectively, wherein

said negative electrode comprises graphite powder having a particle size equal to or smaller than 100 μm,

said graphite powder has both a hexagonal structure and a rhombohedral structure, and

said graphite powder has a fraction of the rhombohedral structure equal to or less than 20% by weight, and a fraction of the hexagonal structure equal to or more than 80% by weight.

25. A non-aqueous secondary battery, manufactured by a method comprising the steps of:

laminating electrodes with graphite for a positive electrode and with a lithium group oxide for a negative electrode; and

enclosing said electrodes laminated with graphite into a cell vessel with an electrolyte solution, wherein

said electrodes laminated with graphite are manufactured by the steps of:

pulverizing the graphite to graphite powder having a particle size equal to or smaller than 100 μm,

treating said graphite powder by heating at 900°C or higher, after said pulverizing, and

fabricating said graphite electrodes by subjecting the heat-treated graphite powder to pressing.

26. A non-aqueous secondary battery according to claim 25, wherein said treating said graphite powder by heating is performed so as to modify crystallinity of the graphite powder such that a fraction of the graphite powder having rhombohedral structure is equal to or less than 20% by weight.

27. A non-aqueous secondary battery according to claim 26, wherein, in said treating said graphite powder by heating, said crystallinity of the graphite powder is modified so that a fraction of the graphite powder having hexagonal structure is equal to or greater than 80% by weight.

28. A non-aqueous secondary battery according to claim 26, wherein crystallinity of the graphite powder is modified during the heat treatment so that a fraction of the graphite powder having rhombohedral structure is equal to or less than 10% by weight.

29. A non-aqueous secondary battery, manufactured by a method comprising the steps of:

laminating electrodes with graphite for a positive electrode and with a lithium group oxide for a negative electrode; and

enclosing said electrodes laminated with graphite into a cell vessel with an electrolyte solution, wherein

said electrodes laminated with graphite are manufactured by the steps of:

pulverizing the graphite to graphite powder having a particle size equal to or smaller than 100μm,

immersing said graphite powder into an acidic solution as an immersing treatment, said acidic solution containing at least one compound selected from a group consisting of sulfuric acid, nitric acid, perchloric acid, phosphoric acid and fluoric acid, and then washing said graphite powder with water, neutralizing, and drying said graphite powder, and

fabricating said electrodes laminated with graphite by subjecting the dried graphite powder to pressing.

30. A non-aqueous secondary battery, manufactured by a method comprising the steps of:

fabricating graphite electrodes by subjecting graphite powder to pressing;

laminating said graphite electrodes with a lithium group oxide; and

enclosing said graphite electrodes into a cell vessel with an electrolyte solution, wherein

said graphite powder is manufactured by a method comprising:

pulverizing raw graphite, to produce pulverized graphite;

sieving said pulverized graphite for obtaining graphite powder having a maximum particle diameter of 100 μm; and either

(a) heating said graphite powder as a heat treatment for transforming the crystalline structure to hexagonal structure, and further heating said graphite powder, at a higher temperature than said heat treatment for transforming the crystalline structure, for eliminating impurities; or

(b) immersing said graphite powder into an acidic solution as an immersing treatment, washing with water, neutralizing and drying.

31. A non-aqueous secondary battery, manufactured by a method comprising the steps of:

laminating graphite electrodes with a lithium group oxide; and

enclosing said graphite electrodes into a cell vessel with an electrolyte solution, wherein

said graphite electrodes are manufactured by the steps of:

granulating the graphite to graphite powder having a particle size equal to or smaller than 100 μm,

(a) treating said graphite powder by heating at 900°C or higher, after said granulating, or

(b) immersing said graphite powder into an acidic solution as an immersing treatment, washing said graphite powder, neutralizing said graphite powder, and drying said graphite powder, and

after said (a) treating or said (b) immersing, fabricating said graphite electrodes by subjecting the heat-treated graphite powder to pressing.